

The Institution of Engineers, Australia
Sydney Engineering Heritage Committee

Oral History Program

INTERVIEW TAPE LOG

Interviewee: Nicholas Trahair	Tape Numbers: IEA SYD PT10
Interviewer: Paul Tinslay	Number of Tapes: One
Place of Interview: Sydney University	
Date of Interview: 19 August 1998	
Restrictions on Use: Nil	
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Tape: IEA SYD: PT10, Side A		
Time/ Counter	Subject	Proper Names & Keywords
0-95	Birth in Brisbane and schooling in Sydney. Attended Sydney University. Death of father. Scholarship, cadetship with Commonwealth Department of Public Works, Canberra, 1953. Holiday work in Canberra. First trip away from home, 6 months practical work experience.	Brisbane Drummoyne, Gladesville, Eastwood Fort Street Boys High Sydney University Civil Engineering Scholarship Cadetship Commonwealth Dept of Public Works Waterhammer analysis Commonwealth hostel Canberra Repertory Society
96-160	University days, recalls various lecturers. Good at geometry, later taught it. Discusses subjects studied, enjoyed analytical subjects. Interest in hydraulics as a student, later taught it. Describes university laboratories and equipment; new laboratories and change of location in 1960.	Professor Roderick Jimmy Vogan Structural engineering Ozzie Potter Hydraulics Charlie Gray Computations Dick Watkins Laboratories T&R building New laboratories
161-200	Finished Bachelor's Degree. Postgraduate work towards a Masters Degree, working on flexural-torsional buckling of columns. Still bonded to return to Canberra Department of Works. Completed studies and returned to Canberra for two and a half years. Increased demand for civil works, due to huge expansion of Canberra population. Worked on dam,	Bachelor's Degree Professor Roderick Master's Degree of Engineering Science Flexural-Torsional Buckling Canberra Department of

	and development of Canberra Lakes and hydraulic model studies, also gravity pipeline	Works Research Student Stipend Master's Degree Population expansion New double-curvature arched dam Development of Canberra lakes Hydraulic models Gravity pipeline Cotter River
201-305	Sourcing of new engineers from major development group. Senior engineers Keith Jack and Ken Harding, Ken Harding in charge of group. Became fed up with Public Service mentality, accepted position to teach Hydraulics in Professor Roderick's department. Returned to Sydney in late 1960, next year taught Descriptive Geometry and Hydraulics. 1963 or 1964 move from old campus to new. Research work in lateral buckling of beams, planned to become a consulting engineer. Interest in design of steel structures. Discussed Professor Roderick's influence: the increase of teaching staff, the setting up of postgraduate courses, research degrees.	Keith Jack Ken Harding Principal Engineer Inexperienced young engineers Ian Woods Cadet with Department Professor of Hydraulics University of Canterbury in Christchurch, New Zealand University of New South Wales Professor Roderick Hydraulics Descriptive Geometry Sydney New campus Lateral buckling of beams PhD Consulting Engineer British Standard BS449 Roderick's influence
306-420	Wrote papers concerned with research, first paper on hydraulics, pressure survey of main pipelines. 6 or 7 written before PhD. PhD long process, took a break and did experimental work for a couple of years on scour patterns in rivers, interested in energy dissipaters for dams, but decided to return to the predictability of the study of steel structures. Renewed interest in PhD; sabbatical leave. At that time, little training or qualifications required to become a lecturer, learned from observation, needed to be well prepared. Higher expectations from students today and more training for teachers.	Research papers Upper Cotter Dam PhD Scour patterns Energy dissipaters Steel structures Sabbatical leave Teaching requirements Hydraulics
421-560	Started PhD during 7-year period spent teaching Hydraulics and Descriptive Geometry. At end of 1967 went on study leave to St Louis, USA, for 14 months, worked with Professor Ted Galambos, leading expert in steel structures, doing research work and teaching. Returned to Australia, taught structural subjects. Discussed differences between Australian and American teaching methods. Teaching codes; Standards Committee; Australian Standard originally a copy of the British Standard; new standard a combination of best of Australian and British Codes. Taught Design and Structural Analysis subjects in USA.	PhD Hydraulics Descriptive Geometry Study leave St Louis Professor Ted Galambos Structural subjects Teaching methods Washington University Standards Committee BD1 Max Slade American, British and Australia Codes Design Structural Analysis

560-678	Discussion about time spent on study leave in USA with wife and children, beneficial experience. Returned to Australia, teaching structural courses, more administrative work. Successfully applied for Associate Professorship. In 1974 took study leave to Sheffield University in the United Kingdom. Spoke about working with postgraduate students in the period between first and second study leaves	Study leave Georgetown Associate Professorship Second study leave Sheffield University United Kingdom Postgraduate students
End Side A, Tape 1 of 1		

Tape: IEA SYD: PT10, Side B		
Time/ Counter	Subject	Proper Names & Keywords
0-070	Australian research programs set up in 1950's in structural engineering by Professor Roderick. Geomechanics and technical engineering. Refers to time spent in USA. Continued membership of Code Committee BD1 for Standards Association. Old code CA1 in 1968 became AS1250 in 1972 when it was metricated. By 1980's needed to be revised. Became Co-Chairman with Tim Hogan. Up until 1990 upgrading 1250 and preparing new limit states code AS4100. A great deal of time spent travelling around Australia talking about codes to practising engineers, developing design aids, updating textbooks, producing new computer programs.	Aspects of lateral buckling of beams John Anderson Kitty ??? Professor Roderick Ted Davis Geomechanics Technical engineering Harry Poulos John Booker Ted Galambos Codes Committee BD1 Tim Hogan John Roderick Standard codes New design code
071-134	Time in UK. Shared research projects with David Nethercott. Taught in British system, similar to Australian; degrees 3 years instead of 4. Discussion about subjects taught in British schools as compared to Australian schools. Family's experience of England, Scotland and Wales, children's schooling. Spent time in Europe in campervan.	UK Barry Rawlings David Nethercott Professor of Nottingham University Teaching in UK UK School subjects Engineering degrees Family in UK Travel in Europe
135-160	Returned to Australia in 1975, continued on with teaching, research work, work for steel standards. Professor Roderick retired in 1977, successfully applied for Chair, became professor in 1978, encouraged people to develop themselves and be independent.	Return to Australia Steel standards Professor Roderick Became professor Junior of 3 professors, ? and Davis
161-242	University involvement in consulting work. Did proof engineering work for Qantas at Mascot, Gladesville Bridge, Westgate bridge collapse. Felt need for University to become more active in this field so took on more work. Investigation work on silos, prepared design guide, set up courses and lecture notes in the 1980's.	Professor Roderick Commonwealth Avenue Bridges in Canberra Lakes Scheme Qantas hangar Mascot Gladesville Bridge Westgate Silos Peter Ansurian? Michael Rutter? Chair in Edinburgh
243-384	Became Head of Department following death of Ted Davis, didn't like that role. Explained Challis Professorship and Challis Chairs. Spoke about visiting professorships and visiting fellowships. Research Fellow for Japanese Society for Promotion of Science; spent 6 weeks in Japan based at Nagoya. Doctor of Engineering, higher degree than PhD. Discussed books he's written.	Ted Davis Campbell Allan Harry Poulos John Booker Challis Professorship Visiting professorships and fellowships Washington University Sheffield University Japan Professor Yushi Fukumoto Nagoya

		Doctor of Engineering Published books
385-476	Spoke about work on the Code committee, what was involved, how different sections are put together and the people who work on it. Slightly different process used for Limit States Code AS4100, explanation given. Sydney University produced computer program called Limsteel to help designers design to the new code. Produced new booklet and design aids, also new textbook. Travelled around Australia to introduce new code.	Code committee Professor Roderick BHP Neil Hawkins Limit States Code AS4100 Sydney University Limsteel Australian Institute of Steel Construction New Code Australia
477-516	Discussed awards for papers published with co-author. Recognition for work done by many people.	Institution of Engineers Australia Chapman medal Shortbridge Hardesty Prize American Society of Civil Engineers
End side B, Tape One		
END OF INTERVIEW		